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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/723,767	11/26/2003	Koji Yanagihara	16UL03229	9684

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EXAMINER

SOLANKI, PARIKHA

ART UNIT PAPER NUMBER

3737

DATE MAILED: 11/03/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/723,767

Applicant(s)

YANAGIHARA ET AL.

Examiner

Parikha Solanki

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 26 November 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-11 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date 3/21/05, 7/29/05
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

**DETAILED ACTION*****Information Disclosure Statement***

1. The information disclosure statements (IDS) submitted on 3/21/2005 and 7/29/2005 were filed after the mailing date of the original application on 11/29/2003. The submission is in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statement is being considered by the examiner.

***Claim Rejections - 35 USC § 102***

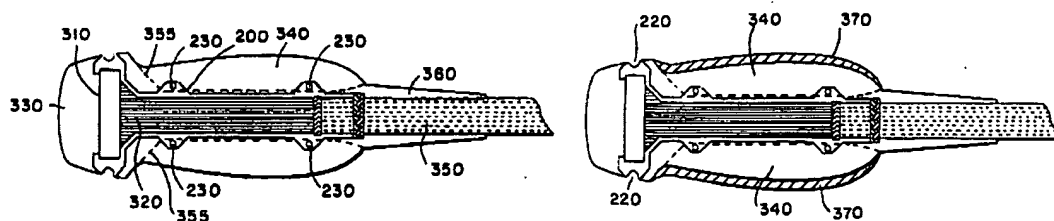
2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1, 2, 9 and 10 are rejected under 35 U.S.C. 102(b) as being anticipated by Van Creveld et al (US Pat. No. 5,810,733), cited by Applicant.

Regarding claim 1, Van Creveld ('733) discloses an ultrasonic probe having a transceiver unit and an enclosure housing for the unit, including a first partial enclosure **370** formed of hard plastics having an opening at the tip, and a second partial enclosure **330** integrally formed with the first partial enclosure (Figs. 3 & 4). Van Creveld ('733) discloses that the second partial enclosure is made of a soft flexible material in order to minimize patient discomfort during imaging (col. 6 lines 23-25).



(Source: Van Creveld (US Pat. No. 5,810,733) Figures 3 and 4)

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Regarding claim 2, Van Creveld ('733) states that the transceiver unit may be formed by a molding process (col. 5 lines 24-26). Van Creveld ('733) is silent with respect to the specific molding process used to form the handle. The claimed phrase "wherein the integrated molding of the first partial enclosure and the second partial enclosure is performed by double molding" is being treated as a product by process limitation; that is, that integration of the enclosures is achieved by double molding. Product by process claims are not limited to the manipulations of the recited steps, only to the structure implied by the steps. Thus, even though Van Creveld ('733) is silent as to the process used to mold integration between the first and second enclosures, it appears that the product in Van Creveld ('733) would be the same or similar as that claimed.

Regarding claims 9 and 10, Van Creveld ('733) discloses a transducer array including a transducer lens 114 as a component of the transceiver unit (col. 3 lines 33-37).

### ***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 4-8 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Van Creveld ('733) in view of Silber (US Pat. No. 5,928,154), both cited by Applicant.

Regarding claims 4-8, Van Creveld ('733) teaches all features of the present invention as noted above. Van Creveld ('733) does not specify the exact type of plastic from which the first and second enclosures are made. Van Creveld ('733) also does not disclose a color code to distinguish between probes of different center frequencies. In the same field of endeavor, Silber ('154) teaches an ultrasonic probe with first and second enclosures, which may be made of thermoplastic materials, polyethylenes, polybutylenes, and the like (col. 7 lines 51-56). Silber ('154) also states that the enclosure may be made of other material blends providing properties of both elastomers and plastics (col. 8 lines 40-46). It would have been obvious to one of ordinary skill in the art at the time of invention to create the probe of Creveld ('733) employing a polycarbonate, polybutylene, ABS resin or thermoplastic for the first enclosure so as to increase

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the probe's durability, while employing an thermoplastic elastomer for the second surface to enhance patient comfort during use of the probe, in light of the teachings of Silber ('154).

Regarding claim 11, Silber ('154) teaches color-coded probe housings for identifying different types or models of probes. At the time of invention, it would have been obvious to one of ordinary skill in the art to modify the probe of Van Creveld ('733) to further include a color coding to identify different types, including probes of different center frequencies, in light of the teachings of Silber ('154).

6. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Van Creveld ('733) in view of Sudol (US Pat. No. 6,162,083). Van Creveld ('733) teaches all limitations of the present invention as noted above, with the exception of the second enclosure partially comprising a thin film at the transmission/reception surface of the probe. In the same field of endeavor, Sudol ('083) teaches an ultrasonic probe coated with an electrically conductive film at the transmission/reception surface of the probe (col. 6 lines 6-11). As such, it would have been obvious to one of ordinary skill in the art at the time of invention to modify the probe of Van Creveld ('733) to include a film coating at the transmission/reception surface in order to enhance electrical conductivity during imaging, in light of the teachings of Sudol ('083).

### ***Conclusion***


7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Umeda (US PG Pubs. No. 2002/0148277) teaches a related ultrasonic probe made of hard resins such as polycarbonates, polybutylenes, ABS resins, thermoplastic resins and thermoplastic polymers, the probe being formed by a double molding process.


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Parikha Solanki whose telephone number is 571.272.3248. The examiner can normally be reached on M-F, 8 - 4:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Brian Casler can be reached on 571.272.4956. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

  
Parikha Solanki  
Examiner – Art Unit 3737

  
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